REMARKS

Claims 1-18 are pending in this application. By this Amendment, the specification and claims 1, 5, 8 and 13 are amended and new claims 16-18 are added. Attached hereto is a marked-up version of the changes to the specification and claims by the current Amendment. The attachment is captioned "Version With Markings to Show Changes Made."

The Office Action indicates that Figs. 1-3 should be designated as --Prior Art--. However, the Office Action has not provided any evidence that these figures are prior art. These figures have not been identified by Applicants as being Prior Art. Figures 1-3 are discussed in a background section of the present application. These figures are merely described as examples of printed circuit boards having positive thermal coefficient switches. Applicants have not admitted anywhere in the specification or elsewhere that these figures are prior art. Accordingly, these figures have not been labeled prior art.

The Office Action objects to claim 5 as being of improper dependent form. By this Amendment, claim 5 is amended to depend from claim 1. Withdrawal of the objection to claim 5 is respectfully requested.

The Office Action rejects claims 1-11 and 13-15 under 35 U.S.C. §102(e) by U.S. Publication 2003/0013344 to Harris or, in the alternative, under 35 U.S.C. §103(a) over the applicants' admitted prior art. The Office Action also rejects claim 12 under 35 U.S.C. §103(a) over Harris in view of U.S. Patent 6,305,987 to Crane, Jr. et al. (hereafter Crane). The rejections are respectfully traversed.

As noted above, applicants' have not admitted that Figs. 1-3 are prior art.

The Office Action also fails to provide any indication why these figures are prior art. Therefore, the rejection with respect to applicants' admitted prior art is improper. Any rejection or alternative rejection with respect to applicants' alleged admitted prior art should be withdrawn.

The Office Action alleges that Harris discloses the claimed connector port (14), plurality of connector leads (20) and a plurality of positive thermal coefficient switches (elements 152, 154, 190). However, Harris does not teach or suggest all the respectively claimed features. That is, independent claim 1 recites a connector including at least one connector port to supply power or establish communications to a printed circuit board, at least one connector lead to connect the at least one connector port to the printed circuit board and at least one positive thermal coefficient switch provided as part of the connector and provided between the at least one connector port and the at least one connector lead to cut off communications or power and protect at least one circuit in the printed circuit board. However, Harris does not teach or suggest all these features of claim 1.

More specifically, Harris shows a connector 10 having a cavity 14 in Fig. 1 and a connector 110 having cavities 114 and 126 in Fig. 2. As shown in Fig. 2, a separate printed circuit board 136 slides in the direction of arrow 158 to within a cavity 126 of the connector 110 such that the printed circuit board 136 contacts leads 116a-116h. See Harris' paragraphs [0054]-[0061]. Harris clearly shows that the printed circuit board 136 is inserted within the cavity 126 of the connector. The Office Action asserts that the electrical components 152, 154 and 190 correspond to the claimed at least one positive thermal coefficient switch. However, the electrical

components 152, 154 and 190 are provided on the printed circuit board 136 and are not part of the connector. Thus, Harris does not teach or suggest at least one positive thermal coefficient switch provided as part of the connector and provided between at least one connector port and the at least one connector lead to cut off communications or power and protect at least one circuit in the printed circuit board.

Additionally, Harris does not teach or suggest the at least one connector port to supply power or establish communications to a printed circuit board. The Office Action asserts that Harris' cavity 14 corresponds to the claimed connector port. However, the cavity 14 does not supply power or establish communications.

For at least these reasons, it is respectfully submitted that independent claim 1 defines patentable subject matter. Each of independent claims 8, 13 and 16 define patentable subject matter for at least similar reasons as claim 1. Claims 2-7 depend from claim 1, claims 9-12 depend from claim 8, claims 14-15 depend from claim 13 and claims 17-18 depend from claim 16 and therefore define patentable subject matter at least for this reason.

In addition, the dependent claims also recite features that further and independently distinguish over the applied prior art.

For example, dependent claim 2 (and similarly dependent claims 10, 14 and 17) recites that the at least one positive thermal coefficient switch is an axial leaded positive thermal coefficient switch embedded within the connector. The Office Action does not even address this feature of the switch being embedded within the connector. This is primarily because Harris' elements 152, 154 and 190 are provided on the printed circuit board. This does not suggest a switch embedded

within the connector. Additionally, dependent claim 3 (and similarly dependent claims 11, 15 and 18) recite that the at least one positive thermal coefficient switch is a surface mounted positive thermal coefficient switch mounted on the connector. The Office Action does not even address this feature of the switch being mounted on the connector. This is primarily because Harris' elements 152, 154 and 190 are provided on the circuit board. This does not suggest a switch mounted on the connector. Dependent claims 2-3, 10-11, 14-15 and 17-18 define patentable subject matter at least for these additional reasons.

For at least the reasons set forth above, it is respectfully submitted that each of claims 1-18 defines patentable subject matter. Withdrawal of the outstanding rejections is respectfully requested.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the above identified application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-18 are respectfully requested.

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees and excess claim fees, to

Deposit Account No. 01-2135 (referencing case No. 219.40436X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

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Version with markings to show changes made

IN THE SPECIFICATION:

The paragraph beginning on page 1, line 12 has been amended as follows:

--In the rapid development of computers many advancements have been seen in the areas of processor speed, throughput, communications, and fault tolerance. Today an entire computer can fit into the palm of a hand that are known as palm computers and personal digital assistants do. In a larger cabinet peripherals may also be included in the computer system that once filled entire rooms. However, regardless of size of the cabinet or the usage a printed circuit board serves, space is always at a premium on a printed circuit board. This would particularly be the case for a baseboard (motherboard) in which a microprocessor, memory, communications interface, and peripheral interfaces are attached thereto. However, it would also be the case for the peripheral and communication's interfaces that would often be placed on separate boards. Further, the printed circuit board serves the primary function of establishing communications between chips placed on the printed circuit board and possibly other boards. Therefore, a paramount concern in printed circuit board design is the communications and power lines and [there] their layout on the surface of the printed circuit board or in the embedded layers of the printed circuit board and communications between one layer and another in the printed circuit board.--

The paragraph beginning on page 8, line 1 has been amended as follows:

--FIG. 7 is a top view of another example of a printed circuit board using the embodiments of the present invention shown in figures 4A through 5B. FIG. 7 is similar to FIG. 6 with the exception that certain leads/traces 40 connect to a common connector lead contained within switch 30. Therefore, a single positive thermal coefficient switch [maybe] may be placed in or surface mounted to switch 30 and support several leads/traces 40 without the need for individual leads/traces 40 on the printed circuit board. Thus by being able to support multiple leads/traces 40 with a single positive thermal coefficient switch significant savings of space and money [maybe] may be realized utilizing the embodiments of the present invention.--

IN THE CLAIMS:

Claims 1, 5, 8 and 13 have been amended as follows:

1. (Amended) A connector, comprising:

at least one connector port in the connector to supply power or establish communications to a printed circuit board;

at least one connector lead to connect the at least one connector port to the printed circuit board; and

at least one positive thermal coefficient switch [connected to] provided as part of the connector and provided between the at least one connector port and the at least one connector lead to cut off communications or power and protect at least one circuit in the printed circuit board.

5. (Amended) The connector recited in claim [4] 1, wherein the at least one connector lead connected to the at least one connector port is connected to at least one trace/lead embedded in or mounted on the printed circuit board.

8. (Amended) A connector, comprising:

at least one connector port in the connector to supply power or establish communications to a printed circuit board;

a plurality of connector leads to connect the at least one connector port to the printed circuit board; and

a plurality of positive thermal coefficient switches [connected to] provided as part of the connector and provided between the at least one connector port and the plurality of connector leads to cut off communications or power and protect at least one circuit in the printed circuit board.

13. (Amended) A connector, comprising:

at least one connector port in the connector to supply power or establish communications to a printed circuit board;

a plurality of connector leads to connect the at least one connector port to the printed circuit board; and

a plurality of positive thermal coefficient switches [connected to] provided as part of the connector and provided between the at least one connector port and the plurality of connector leads to cut off communications or power and protect at least one circuit in the printed circuit board, wherein a single connector lead of the

plurality of connector leads is connected to a positive thermal coefficient switch of the plurality of positive thermal coefficient switches and is connected to a plurality of leads/traces contained within the printed circuit board and connected to the at least one circuit in the printed circuit board.